Dickson, at the early age of fifty-one, comes upon us with startling unexpectedness. Two days before Christmas Prof. Dickson left Edinburgh, in his usual health and vigour, for Hartree House, his Lanarkshire residence. During the following days he spent much of his time in the favourite pastime of curling, which he much enjoyed. On Friday last, December 30, 1887, he was in exceptionally good spirits on the ice; his side was winning a close match, and he entered keenly into the excitement of the moment, when, without warning, he dropped dead in the act of making a shot.

Alexander Dickson was born in Edinburgh on February 21, 1836, the second son of David Dickson, of Hartree and Kilbucho, extensive estates in Lanarkshire and Peebles-shire, to which he afterwards succeeded, his elder brother having predeceased his father. Educated when a boy at home, he proceeded to the University of Edinburgh, where he graduated M.D. in 1860, obtaining a gold medal for a thesis on "The Development of the Seed-vessel of *Caryophyllaceæ*." After graduating, he soon abandoned medicine, and devoted himself to botanical pursuits. During the year 1862 he acted as Deputy Professor of Botany in the University of Aberdeen for Prof. Dickie, then in bad health; in 1866 he was appointed to the Chair of Botany in the University of Dublin, vacant by the death of Dr. W. H. Harvey; and a year later he added to this appointment that of Professor of Botany in the Royal College of Science for Ireland. In 1868, on the death of Dr. G. W. Walker-Arnott, he succeeded to the Chair of Botany in the University of Glasgow, which he held until 1879, when he was appointed Professor of Botany in the University, and Regius Keeper of the Royal Botanic Garden, in Edinburgh, upon the resignation of these offices by Dr. J. H. Balfour. He held these appointments at the time of his death. He received the honorary degree of M.D. from the University of Dublin, and that of LL.D. from the University of Glasgow, and was a member of various learned Societies. Besides his scientific life he had another important part to play as a laird with large properties in three counties, and he was a model landlord. He had the highest ideas of the duties of his position, and acted up to them. Money, time, and energy were given with self-denying devotion to the improvement of his farms and of the condition of his tenants, and no better-ordered estates could be found than those which he controlled. He was a Deputy-Lieutenant of Peebles-shire, and took an active share in all the functions which his position entailed.

By the death of Alexander Dickson the botanical world loses one of its best morphologists. He wore the mantle of the old French school typified in Mirbel, Richard, St. Hilaire, and Payer, of which Baillon is at present the foremost French representative; and at a time like the present, when it is a fashion to decry morphology, his loss falls all the more heavily. No botanist in this country had so full and accurate a grasp of organography. His published papers, numerous and valuable as they are, afford but an imperfect idea, significant indeed, of the wealth of his knowledge, and the keenness of his perception. Those who came in contact with him will remember the fascination of his discourse, and the surprising variety and aptness of the illustrations which he could bring up one after the other to support his own views or confound those of an opponent. In all his scientific work the strong conservatism of his nature found expression. His cautious and logical mind did not allow of his following with enthusiasm rash speculations of the more ardent botanical workers; and the flood of literature on botanical subjects which is poured out year by year had no terrors for him, as he acted upon the principle, which many will agree is a sound one, that, if you leave the literature until it is a year or two old, what is worth reading sifts itself. The soundness of his judgment upon scientific problems may in some measure be traced to the influence of the precept and example of that glorious band of real teachers, which at the time of his University career made Edinburgh a centre of attraction in the intellectual world; and a good illustration of his force of mind is to be found in his attitude towards the much-discussed question of the growth of the cell-wall. Having satisfied himself that the apposition theory was a sufficient explanation, he consistently opposed Nägeli's intussusception theory during the years when it was all but universally accepted; and now the botanical world has come round again to regard an apposition theory as that which has the better basis in fact.

All organographic questions had a peculiar interest for Dickson. A considerable portion of his own work was devoted to the elucidation of the true nature of the flowers in *Coniferæ*. As the result of his researches on *Dammara* and observations on other *Coniferæ*, he adopted Baillon's view of the carpellary nature of the integument in *Pinus*, and, notwithstanding the defection by Strasburger, who originally supported this view, he continued to maintain it. Phyllotaxis was a subject to which he devoted great attention, and upon which he published several important papers. Amongst his most valuable researches are those on the embryogeny of *Tropæolum*, in which he traced the history of the peculiar roots by which the embryo is nursed in the seed; and the records of his embryological researches in *Pinguicula*, *Ruscus*, *Zostera*, *Phœnix*, *Delphinium*, and other plants, are very interesting and valuable contributions to knowledge. In recent years he gave considerable attention to the construction and development of pitcher-plants, and proved the true nature of the parts of their complex organs; and the structure of the *Hepaticæ* also engrossed him, one of his last papers being upon some species of this group, in which he joined issue with Leitjeb upon some fundamental points. In all his work there may be seen the scrupulous accuracy and attention to detail which was a leading feature in his character, and no man ever worked with more care and jealous regard for truth and with a more generous appreciation of the work of others.

Amidst the work of his scientific life and the duties connected with his estates he found time to cultivate the artistic side of his nature, which was developed in no ordinary degree. He was an accomplished and enthusiastic musician, and in later years found peculiar pleasure in collecting Gaelic airs. At botanical excursions to the Highlands he might be frequently found noting down an air as it was droned by a gillie or whistled by a herd, and he amassed a considerable number of these airs, which at one time he thought of publishing. He was also a very skilful draughtsman, and his drawings in chalk on the slate were quite a feature of his lectures.

In the discharge of every duty he was most conscientious, and his unostentatious kindliness attracted everyone who had dealings with him. Quiet and retiring in disposition, he was endeared to all by the nobility of his character and his sympathetic nature. As Professor his students loved him; as laird his tenants loved him. It has been said of him he could never lose a friend, for he never could say an unkind word or omit to do a kind action, and in this estimate all who knew him will concur. The news of his death will be heard with sorrow by a wide circle of friends, and bring sadness to many a heart which will mourn for one who had fine generosity of the kind that lets "not the right hand know what the left hand doeth."

NOTES.

THE Municipal Council of Paris proposes to establish in the Faculty of Sciences a new professorship devoted to the philosophy of biology, and especially to the teaching of the doctrines of Darwin. This distresses some of the older French zoologists, but "their reign," a correspondent writes to us from Paris, "is coming to an end, and notwithstanding their obstinate and unintelligent opposition, Darwinism is the creed of all the younger French naturalists. The only trouble with regard to the new professorship will be to put the right man in the right place."

PROF. BONNEY'S course of lectures on geology begins at University College on Wednesday, January 11, and will be continued on the Thursdays, Tuesdays, and Wednesdays following. The course on economic geology begins on the following Friday, and will be continued on that day in each week.

A COURSE of about six lectures on "Photographic Chemistry" will shortly be delivered by Prof. R. Meldola, F.R.S., at the Finsbury Technical College. The course will begin on Wednesday, January 18, at 7.30 p.m., and be continued on successive Wednesdays. The object of the lecturer will be to develop the scientific principles upon which modern photography is based, so as to enable professional and amateur photographers to keep abreast of recent advancements in the subject. Those who attend the lectures will have the opportunity, if they desire it, of receiving practical laboratory instruction in the testing and valuation of photographic chemicals.

AT the opening meeting of the session of the Society of Telegraph-Engineers and Electricians, on Thursday, the 12th instant, the new President, Mr. Edward Graves, will deliver his inaugural address.

IN the abstracts of the Proceedings of the Chemical Society (Jan.–Dec. 1887) we find the following list of grants made from the Research Fund of the Society during the year:—£25 to Prof. E. H. Rennie, for the further study of the red colouring-matter of *Drosera whittakeri*; £25 to Mr. Holland Crompton, for the study of the action of nitric acid on copper-zinc and copper-tin alloys with the object of determining whether the metals exist in combination or admixed; £10 to Mr. C. H. Bothamley, for experiments on the use of dyes in photography, and especially on the sensitizing action of the dye; £25 to Mr. W. P. Wynne, for the determination of the nature of the products formed on oxidizing nitric oxide by admixture with oxygen; £10 to Mr. A. Wynter Blyth, for the study of the constitution of butter-fat.

METEOROLOGY is indebted to Dr. J. Hann for an exhaustive discussion of the distribution of atmospheric pressure over Central and Southern Europe, based upon the monthly and yearly means at 205 stations, for the thirty years 1851–80. Very few such discussions have been undertaken since the appearance of Buchan's great work, about twenty years ago. The author insists on the application of the correction for gravity, which up to the present time has been generally neglected. Only a few observations for France have been used in this discussion, but a work of a similar nature is in hand for that country by M. Angot. Charts are also drawn for each month and for the year, showing the isobars for every 02 inch at the sea-level, and also for four months and the year at the level of 500 metres above the sea. The work forms Part 2, vol. ii. of Dr. Penck's "Geographische Abhandlungen" (Vienna, 1887).

THE Chief Signal Officer of the United States has issued a circular, dated December 6, stating that as, in his belief, the great value of simultaneous maps consists in showing the general features of the weather of the northern hemisphere, he has decided to reproduce daily a chart showing the general outlines of the pressure and wind for certain selected stations, although as before stated (NATURE, Dec. 8, p. 137), he cannot guarantee their continuance for any great length of time. The charts have commenced with October 1, 1886, and are based on the observations taken at noon, Greenwich time; the temperature observations are not represented, owing to the limited means available for such work.

THE Central Physical Observatory of St. Petersburg has issued a very useful table, showing for all its telegraphic stations the normal temperatures for 7 a.m. for each month, calculated from the number of years available for each place. From these values the Observatory constructs diagrams showing the annual march of the temperature, and from these curves the normal temperature may be calculated very closely for each day of the year. These data enable the Observatory to introduce into its Daily Weather Reports the departure of the temperature day by day from its normal value. The normal temperatures for foreign stations are to be similarly dealt with subsequently.

THE Swedish Government has given notice that in the beginning of the year 1888, a fog signal will be established near Hallands Wäderö lighthouse, on the eastern shore of the northern approach to the Sound, Kattegat. The signal will be a steam syren, which, during thick or foggy weather, will give *two blasts every minute*, in the following manner; a low note of *seven seconds* duration, an interval of *three seconds* silence, then a high note of *three seconds* duration, followed by an interval of *forty-seven seconds* silence.

THE Government *Gazette* of the Colony of Lagos of July 30 last contains monthly meteorological means for the year 1886. The observations are made at the Colonial Hospital, lat. 6° 27′ N., long. 3° 26′ E.

ON December 11, about 5.30 p.m., a brilliant meteor was seen in and around Christiania. It moved slowly in a south-easterly direction, and disappeared behind a bank of clouds. Its light, of a yellow-green colour, was very intense. The passage occupied about five seconds.

EARTHQUAKES on December 16 and 17 are reported from Prinpolje and Plewlje, in Bosnia. At Werny, in Turkistan, a shock occurred at midnight on December 16. A shock was noticed at Geneva on December 19 between 5 and 6 p.m. A telegram from Mexico states that a sharp shock occurred there at half past 7 on January 2.

A NUMBER of highly interesting experiments upon the behaviour of passive iron towards nitric acid when placed in a powerful magnetic field have recently been made by Messrs. Nichols and Franklin (*Amer. Journ. of Science*, December 1887). About 8 cubic centimetres of nitric acid, specific gravity 1·368, were poured upon a gramme of powdered iron contained in a perfectly clean test-tube. This test-tube was immersed in water contained in an outer glass vessel, and the temperature of the contents of the tube could be accurately ascertained by means of a thermometer suspended in it. The whole apparatus was then carefully arranged between the poles of an electro-magnet specially constructed to give a field as uniform as possible. Before actuating the magnet it was found that the iron remained perfectly passive in presence of the nitric acid until the temperature was raised to 89°, when the usual explosion consequent upon loss of passivity occurred. But on repeating the experiment when a powerful current was traversing the coils of the electro-magnet, effervescence commenced at once, and at 51° the explosion occurred in a most violent manner, projecting most of the liquid out of the tube. The remainder of the liquid, however, remained quiescent until the iron was touched with the thermometer-bulb, when a second explosion occurred. In a third experiment the magnet was not actuated until the apparatus was heated to 60°; but the moment the current was allowed to pass the explosion occurred instantaneously. Hence it appears that the action of the magnet is to lower the temperature of transition from the passive to the active state. In attempting to determine the cause of this singular phenomenon, it was found that when two iron bars placed parallel to the lines of force in the magnetic field were submerged in any liquid capable of attacking iron, the ends of one bar and the central portions of the other being alone allowed to come into actual contact with the liquid, the bar with ends exposed became in relation to the other as zinc to platinum, so that on connecting the bars by wires a permanent current was found to flow. Hence it is supposed that, in case of a single mass of iron, local currents will be set up between those parts in which magnetic poles are induced and the intermediate parts, and Messrs. Nichols and Franklin are of opinion that these local currents are the cause of the curious behaviour of passive iron in the magnetic field.

A MEETING was held at Philadelphia on December 12 to celebrate the hundredth anniversary of the birth of Thomas Hopkins Gallaudet, the pioneer of the movement for the instruction of the deaf in America. A short biographical sketch of Gallaudet was read, and one of his poems was recited by four deaf girls in the sign-language. Prof. Graham Bell delivered an address, which was interpreted into the sign-language as rapidly as it was spoken, and, according to *Science*, was greatly appreciated by the many deaf persons in the audience. The two sons of Gallaudet, both of whom are engaged in continuing the work of their father—one as the President of the deaf-mute College at Washington, the other as a pastor for the deaf—were present, and made remarks suitable to the occasion.

MESSRS. MACMILLAN AND CO. will publish immediately a new Treatise on Algebra, by Mr. Charles Smith, of Sidney Sussex College, Cambridge, whose previous text-books on Conic Sections, on Solid Geometry, and on Elementary Algebra have been very favourably received. The new book is designed for the use of the higher classes of schools and the junior students in the Universities. One important change is made from the usual order adopted in English text-books on algebra, in that some of the tests of the convergency of infinite series are considered before such series are made any use of. A knowledge of the elementary properties of determinants being of great and increasing practical utility, Mr. Smith has introduced a short discussion of their fundamental properties, founded on the treatises of Dostor and Muir. No pains have been spared to insure variety and interest in the examples, which have been selected from numerous examination-papers and from the mathematical journals.

MESSRS. MACMILLAN AND CO. have in the press a treatise on Higher Arithmetic and Elementary Mensuration, by Mr. P. Goyen, Inspector of Schools in New Zealand. Feeling the defect in most text-books of arithmetic that the worked-out types are all of the simplest character, while the exercises which follow them abound in difficulties, Mr. Goyen has worked out an immensely large number and variety of graduated types, and taken great pains to adapt the exercises to them. In the mensuration, wherever the geometrical proof of a rule is quite simple, it is given. A chapter on surds is inserted, because a knowledge of surd operations is useful in mensuration, and is required in many public examinations.

A GOOD address on some sociological aspects of sanitation was lately delivered before the Philosophical Society of Glasgow by Dr. James B. Russell, President of the Society. This address has now been published. It contains some excellent remarks on the extent to which the State has a right to limit individual freedom in the attempt to establish the conditions of public health.

THE Journal of the Straits Branch of the Royal Asiatic Society (No. 18), just received, contains the Malay text, with an English translation, of "Raja Donan," a Malay fairy-tale. This is one of a series of *cheritras*, taken down, word for word, from the lips of Mir Hassan. Among the other contents of the number are an essay (continued from No. 17) towards a bibliography of Siam, and an English, Sulu, and Malay vocabulary.

THE editorship of the well-known Brunswick scientific journal, *Globus*, changed with the new year, or, rather, with the commencement of the fifty-third volume on December 19. Dr. Emil Deckert takes the place of Dr. Richard Kiepert, and at the same time an alteration is made in the sub-title. Where, formerly, this read, "*mit besonderer Berücksichtigung der Anthropologie und Ethnologie*," it now reads "*mit besonderer Berücksichtigung der Ethnologie, der Kulturverhältnisse, und des Welthandels*," and in an address to the reader the editor and publishers explain that the alteration represents a corresponding alteration in the programme. As before, every effort will be made to supply abundant information of a geographical and ethnological character; but as German national interests have largely developed and extended in the last few years, in future a good deal more attention will be devoted to questions connected, as we understand it, with German possessions and German interests abroad. The practical effects of thus enlarging the scope of the journal are not apparent in the number before us, but it may be hoped that *Globus* will not lose its character as a popular educator in geography and the allied subjects. Why a similar journal has not been established in this country is a mystery.

AN American journal devoted to geology and the allied sciences has just been started. It is called the *American Geologist*, and will for the present be published at Minneapolis, Minn.

MR. A. SIDNEY OLLIFF, of the Australian Museum, Sydney, writes to the January number of the *Entomologist* about giant Lepidopterous larvæ in Australia. The larva of *Chalepteryx collesi*, a large moth which was unusually abundant during the past summer in the vicinity of Sydney, often, he says, attains the length of 7 inches, and is robust in proportion. This moth feeds on various Eucalypti, and is of a rich satiny-brown colour; each segment, except the first, is furnished with eight yellow verrucose spots, which emit long brown bristles; the anal extremity, a yellow band on the first segment, and two additional verrucose spots on the second and third segments also give rise to bristles. The cocoon, as well as the larva of this species, is armed with fine and exceedingly sharp bristles, which, if carelessly handled, readily penetrate the skin, causing considerable irritation. The larva of the beautiful swift (*Zelotypia stacyi*) measures 8 inches when full grown, and Mr. Olliff has seen several *Cossus* larvæ of similar dimensions.

IN the *Entomologist* for January, Mr. Alfred Bell offers some suggestions about post-Glacial insects. So far as his experience goes, insect remains are by no means common, and belong chiefly to the Coleoptera. He gives thirty species, nearly all of which belong to this division of the insect world. As Mr. Bell points out, however, it does not follow that Lepidoptera were not present during the post Glacial period, since they occur in beautiful preservation in deposits of much older date in England and on the Continent. The nature of the post-Glacial soils was not favourable to the preservation of soft-bodied animals. "Hence," says Mr. Bell, "if anyone knows of Lepidoptera retained in a fossil state, it will be of real service to science if he will say where they were found, and under what conditions."

IN the January number of the *Zoologist*, Mr. Allan Ellison has an interesting article on the autumnal migration of birds in Ireland. He says that the migration movement of last autumn in Ireland was in all respects a most exceptional one. Some of the migrants appeared unusually early, and all in much larger numbers than Mr. Ellison had ever before observed. On October 8 he saw the first flocks, both of starlings and redwings. On the same day, and for about a week after, immense numbers of golden plovers were passing over, flying towards the west and south-west in large V-shaped strings. This was about the usual time for starlings and redwings, but early for golden plover. On the 11th again both redwings and starlings were constantly passing. On the 16th he observed a great host of fieldfares, many thousands in number, winging their way across the sky towards the south-west. From October 17 to the beginning of November the starling migration was at its height, the flocks being much larger and more numerous than he had ever observed in former years. He saw four within a quarter of an hour on the afternoon of the 18th. At 4 p.m. on the 22nd, the largest flock he ever saw passed over. It was in the form of a column, perhaps nearly a mile long, and must have numbered thousands, spanning the sky from horizon to horizon for more than half a minute, and was followed in a short time by two smaller flocks. All the latter part of October skylarks were from time to time flying over, generally large straggling flocks or scattered individuals, flying nearly out of sight, but their call-notes being distinctly audible. Mr. Ellison hopes that those who are favourably situated for observing the arrival of winter birds will report whether they have noticed a corresponding abundance of migrant this season.

THE new number of *Mind* opens with an able and suggestive article on pleasure, pain, desire, and volition, by Mr. F. H. Bradley. Mr. J. McK. Cattell has an interesting paper on the Psychological Laboratory at Leipzig. Mr. T. Whittaker writes on individualism and State action; and Mr. D. G. Ritchie on origin and validity.

PARIS is soon to have a Museum of Religions. M. Guimet, of Lyons, who has been a great traveller, has been engaged for years past in collecting altars, priests' robes, and other objects relating to religious ceremonies. These objects he presented some time ago to Paris on condition that a building should be specially devoted to them. This building, close to the Trocadéro Palace, has just been finished, and the collection will soon be transferred to it.

THE additions to the Zoological Society's Gardens during the past week include two Spotted Ichneumons (*Herpestes nepalensis*), a —— Fox (*Canis* ——) from Afghanistan, presented by Lieut.-Colonel Sir Oliver B. C. St. John, K.C.S.I.; a Common Otter (*Lutra vulgaris*), British, presented by Mr. Edward Hart; a Red-throated Diver (*Colymbus septentrionalis*), British, presented by Mr. Charles A. Howell; two Greater Sulphur-crested Cockatoos (*Cacatua galerita*) from Australia, presented by Master Rankin.

OUR ASTRONOMICAL COLUMN.

BRAZILIAN RESULTS FROM THE TRANSIT OF VENUS.—M. Cruls, in a note to the Paris Académie des Sciences, states that the reports of the various expeditions sent out by the Brazilian Government to observe the transit of Venus in 1882 are almost entirely printed, and will shortly appear. Three stations were occupied, viz. S. Thomas in the Antilles, Olinda in Brazil, and Punta-Arenas in the Straits of Magellan. The Baron de Teffé was in command of the first expedition; M. J. d'O. Lacaille of the second, and M. Cruls himself of the third. The duration of the transit at Punta-Arenas was nearly the mean duration, both ingress and egress being slightly accelerated. The two more northern stations had the duration much shortened, ingress being retarded, and egress accelerated. The chief observer at each station was supplied with an equatorial of 6·3 inches aperture; and at S. Thomas two other telescopes of 4·5 and 4·1 inches respectively were also used. At Olinda likewise there was a second telescope in use, of 4·5 inches aperture. The method of projection was employed in order to get rid of the physiological effects produced by the intensity of the solar light, and in combining the observations made with telescopes of different apertures, weights were given to them proportional to the square of the diameters of the object-glasses, in accordance with the results obtained from the experiments of MM. Wolf and André. The resulting parallax from the internal contacts is 8″·808.

THE ASTEROIDS.—Prof. Daniel Kirkwood, of the Indiana University, has just issued a short essay on the asteroids or minor planets, this group of tiny bodies being entitled on many grounds to more particular consideration than it has yet generally received. The first part of the essay gives a brief sketch of the history of the discovery of the first five asteroids, together with the names of the discoverers and date of discovery of all as yet known to us, and a table giving the elements of their orbits. Prof. Kirkwood makes it clear that the numbers of those still unknown are practically inexhaustible, for if Leverrier's estimate be correct, that the quantity of matter contained in the group cannot be greater than one-fourth the mass of the earth, it would yet require no fewer than 72,000,000 bodies as large as Menippe to make up this amount. Fortunately the rate of discovery appears limited to ten or a dozen per annum, so that there is no immediate danger of our being overwhelmed by the impossibility of following up some few millions of orbits. The second part of the work deals with questions relating to the origin of the group, and with certain relationships apparent in their orbits, particularly with regard to the irregular distribution of the asteroids in their ring, certain districts being left entirely void, viz. those where the asteroid would have a period commensurable with that of Jupiter. Prof. Kirkwood has on former occasions repeatedly shown how Jupiter would tend to eliminate bodies revolving in these positions by increasing the eccentricities of their orbits until their perihelion distances fell within the body of the sun itself, and he has accounted for the gaps in the ring of Saturn upon a similar principle. Prof. Kirkwood is of opinion that several of our periodic comets may have been originally members of the asteroid family. All the thirteen comets whose periods correspond to mean distances within the asteroid zone have direct motion, and inclinations similar to those of the minor planets, and their eccentricities are generally less than that of other known comets; whilst five of these comets have periods respectively corresponding to some of the most marked gaps in the asteroid zone.

Prof. Kirkwood makes no reference to the importance of certain members of the group as affording means for the determination of the solar parallax, which many astronomers will consider to be their most useful function, and as compensating for the enormous labour, both of observation and computation, involved in following the paths of so great a number of wanderers. And it would have been exceedingly useful if he had supplemented his other tables by one showing those asteroids which have only been observed during one opposition. Some of those theoretically the most interesting have not been observed for several years, and are practically lost to us, and it would seem a matter of more pressing importance at the present time that these should be picked up again, if possible, rather than fresh additions should be made to a list already unmanageably long.

OLBERS' COMET.—The following ephemeris for Berlin midnight, by Dr. Krueger (*Astr. Nach.* No. 2818), is in continuation of that given in NATURE for 1887 December 15:—

1888.	R.A.	Decl.	Log *r*.	Log Δ.	Brightness.
	h. m. s.	° ′			
Jan. 6	16 50 20	1 22·7 S.	0·2486	0·3821	0·45
8	16 54 8	1 43·4 S.			
10	16 57 51	2 3·4 S.	0·2583	0·3854	0·43
12	17 1 29	2 23·6 S.			
14	17 5 3	2 41·2 S.	0·2679	0·3884	0·40
16	17 8 31	2 59·2 S.			
18	17 11 55	3 16·6 S.	0·2773	0·3910	0·38
20	17 15 14	3 33·4 S.			
22	17 18 29	3 49·6 S.	0·2866	0·3932	0·36

The brightness on August 27 is taken as unity.

Dr. E. Lamp succeeded in seeing the comet for a short time on December 12, and concludes, from a very rough comparison with a star that the ephemeris then required a correction of + 8s. in R.A., but was practically right in Decl.